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THE
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☞See advertisement on last page.

Poetry.

VILLAGE GREATNESS.

In every country village, where
Ten chimneys' smoke perfume the air,
Coniiguons to a steeple,
Gentle folks are found, a score,
Who can't associate any more
With common "country people."

Jack Fallow born amongst the woods,
From rolling logs now rolls in goods,
Enough a while to cash on—
Tells negro stories—smokes cigars—
Talks politics—decides on wars—
And lives in stylish fashion.

Tim Oxgoad, lately from the plow,
A polished gentleman is now,
And talks of "country fellows!"
But ask the fop what books he's read
You'l find the brain pan of his head
As empty as a bellows.

Miss Faddle, lately from the wheel,
Begins quite lady-like to feel,
And talks affectedly genteel,
And sings some pretty songs, too!
But my veracity impeach
If she'd tell what part of speech
Gentility belongs to.

Without one spark of wit refined,
Without one eauty of the mind,
Genius, or education,
Or real worth, or fame to boast,
To see such gentry rule the roast,
Turns patience to vexation.

MY LOVE.

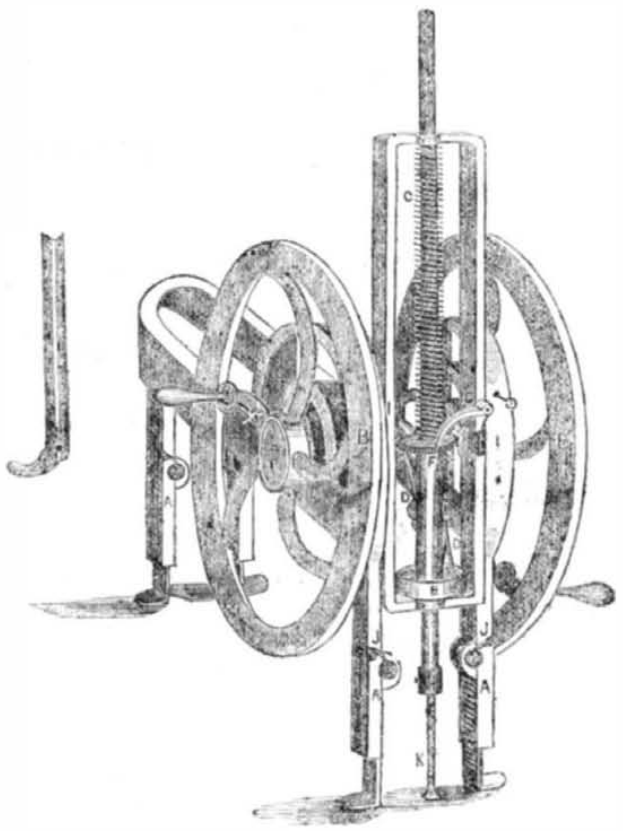
Oh for an hour when the day is breaking,
Down by the there when the tide is making;
Fair as a white cloud thou, love, near me,
None but the waves and thyself to hear me;
Oh, to my breast, how these arms would press thee!
Wildly my heart in its joy would bless thee;
Oh,how the soul thou has won would woo thee,
Girl of the snow neck! closer to me.

Oh for an hour as the day advances,
Out where the breeze on the broom bush dances
Watching the lark, with the sun's ray o'er us,
Winging the notes of his heaven taught chorus,
Oh! to be there, and my love before me,
Soft as the moonbeam smiling o'er me;
Thou would but love me and I would woo thee
Girl of the dark eye, closer to me.

Oh! for an hour where the sun first found us,
Out in the eye with its red sheets round us,
Brushing the dews from the gale's soft winglets
Pearly and sweet with thy long dark ringlets;
Oh! to be there on the sward beside thee,
Telling my tale though I know you chide me,
Sweet were thy voice though it should undo me
Girl of the dark locks! closer to me.

Oh! for an hour by night or by day, love,
Just as the heavens and thou mayest say, love;
Far from the stare of the cold-eyed many,
Bound in the breath of my dove-souled Nanny,
Oh! for the pure chains that have bound me,
Warm from thy red lips circling round me,
Oh! in my soul, as the lights above me,
Queen of the pure hearts, Oh! I love thee.

IMPROVED MACHINE FOR DRILLING ROCKS.



This is an invention of Messrs. J. T. Foster and L. R. Bailey, of this city, and it has but to be seen, to ensure a speedy decision of its excellent capacity for drilling all kinds of rock in a most rapid and perfect manner. It is in itself considered by those who have seen it operate, to be the most complete and perfect rock drilling apparatus in the world. It can drill holes at any angle and it can operate the spindle horizontally or perpendicularly. For mining purposes it will effect an entire revolution in the common mode of drilling, as it will occupy but little room, and they can be made of any size, and the power does not depend upon the length of the drop or spindle, but on the force of a spiral spring, hence it can be carried and operated under ground in the most easy manner. It is very simple in its construction and can be made so as to last for a long time, and is not expensive.

DESCRIPTION.—A A, is the frame, consisting of four legs and a square frame except in the front end, which is open and is a circular arch, which we will explain more fully below. B B, are power wheels for operating the chisels fixed on an axle which moves in journals on the frame. On the centre of this axle is a cam which by every revolution of the axle lifs F, a ratchet wheel, twice every revolution and the drill spindle also. Thus it we turn the wheels B B, the cam fixed on their axle lifts up F and the spindle and lets it drop twice every turn of the axle. But the spindle does not fall on the rock to be drilled, it strikes it with a force equal to any amount of power that may be applied to drive it. This depends on a spiral spring which is fitted round the spindle or arbor, resting on the face of F and on the inside face of the drill stock above, as will be easily noticed. Now as the cam lifts up the spindle by F, the threads of the spiral spring are pressed closer together and when the cam slips from under F, the spindle not merely drops but exerts a percussive force on the drill by the recoil of the spiral spring C. Thus is explained the mode in which the power is applied to drill, and a very complete mode it is.

To drill a circular hole in a rock with a chisel, it is necessary that the chisel should be kept moving round. This machine accomplishes this by two palls or feeding gear, G and H, which catch into the notches of the ratchet wheel F. The operation cannot be better explained than to say that the action is that of the clock escapement. By every blow of the chisel the ratchet wheel moves one or more notches by the palls catching and letting the wheel escape and hence the spindle and drill have both a circular and reciprocating motion.

The spindle can also be shifted up or down in the drill stock. This is done by two tier of ratchet notches extending along the spindle the catching edges of which are opposite to one another, and by the palls D D, which hold the spindle to the collar, it will be observed that as the one catches upward and the other downward, by pressing on the springs of the palls the spindle is relieved from the catches and thus lengthened or shortened.—E, is a circular cam through the centre of which plays the spindle and answers as a bearing for the collar or hub on which the ratchet wheel F, and the palls D D, are fixed.

This drill is arranged so as to operate horizontally as well as perpendicularly and bore at any angle. This is done by the drill stock being attached to the frame by curved sliding boxes which slide in a circular groove in the arch of the frame. J J, is this arch, and under the upper rim is a circular groove. Fitted to this groove is a sliding box one on each arch, to which the drill stock is attached. All that has to be done to change the perpendicular to the horizontal, is to slip out the pins which hold the curved sliding boxes referred to (which cannot be seen in the above) and push back the top of the spindle, when the drill stock will abide to any angle in the arch, and can be made firm to drill at any angle, as already stated. This is a very important consideration, a novelty in a drilling machine.—The legs can be lengthened or shortened by a rack in the inside, operated on by a pinion and held by palls J J. Thus on uneven ground the machine, by lengthening one leg and shortening another, can be made to stand perfectly firm. On the left is a diagram of an excavating chisel. It is designed to make a large opening at the bottom of a hole and its appearance will convey an idea of its utility. There are five important points of advantage in this machine, to wit, 1st. The feeding gear 2d. The combination of the spiral spring with the cam and spindle. 3d. The grooved arch and sliding boxes which attaches the drill stock to the frame and enables this machine to drill a hole at any angle or to be used as a horizontal or perpendicular drill. 4. The adjustable legs for the purpose described, and last but not least, it can be used as a wagon to draw itself, by placing the drill horizontally, turning the machine upside down and by the wheels being higher than than the frame it becomes its own wagon and the spindle can be used as a shaft to draw it.

The inventors have made application for a patent.

RAIL ROAD NEWS.

A New Railroad.

The Canal Railroad from New Haven to Plainville was opened two weeks ago, when a large number of the citizens of New Haven and other places passed over it in a special train. The cars were hailed at the various places with great enthusiasm.

The Air Line.

The directors of the New York and Boston Railroad corporation of (the air line,) met in New Haven on the 14th inst., and made choice of Edward A. Russell as President; Stephen Taylor, Treasurer: Hamilton Brewer Clerk. E. F. Johnson was appointed chief engineer. The Middletown Constitution says—"The company is fairly organized and ready for active operations. The friends of the road have every reason to believe that the scheme long ago conceived in the minds of a few enterprising men, will soon be realized; and that what has tauntingly been denominated fanciful, is in a fair way of becoming practical. The election of the above gentlemen by the directors, guarantees a judicious conduct of the affairs of the company."

Great Western Railroad and Niagara Bridge.

By the Hamilton Gazette, C. W. we learn that C. Ellett. Esq., C. E. has arrived at the Falls with his family and that it is his intention to suspend a temporary bridge on the 1st of June next and to have the bridge finished by the first of June 1849. This will be the most stupendous romantic structure in the world.

The Great Western Railroad is also going on apace, gangs of men are busily engaged on different contracts along the line.

The receipts on the Long Island Railroad for the first eleven days in January, exhibited an increase of forty per cent over the same time last year.

We learn from the Hartford Times, that stock to the amount of $440,000 has been subscribed in New London to the New London and Willimatic Rail Road.

At a late meeting of the Directors of the Fitchburg Railroad Company, Hon. Samuel Hoar, of Concord, introduced a resolution that intoxicating drinks should not be carried over the road. The resolution lies over till next meeting.

Telegraph.

The St. Louis New Era traces a line commencing at Liverpool, thence to Manchester, London, Dover, Calais, Bremen, Hamburg, Dantzic, Riga, St Petersburg, Archangel, Siberia and Behring's Straits on the side of Asia. Thence to be carried across the strait to this continent, and down the coast to Oregon via old 54° 40, thence to Santa Fe, and across the plains to Independence, to connect St. Louis, Philadelphia, and New York. A great scheme.

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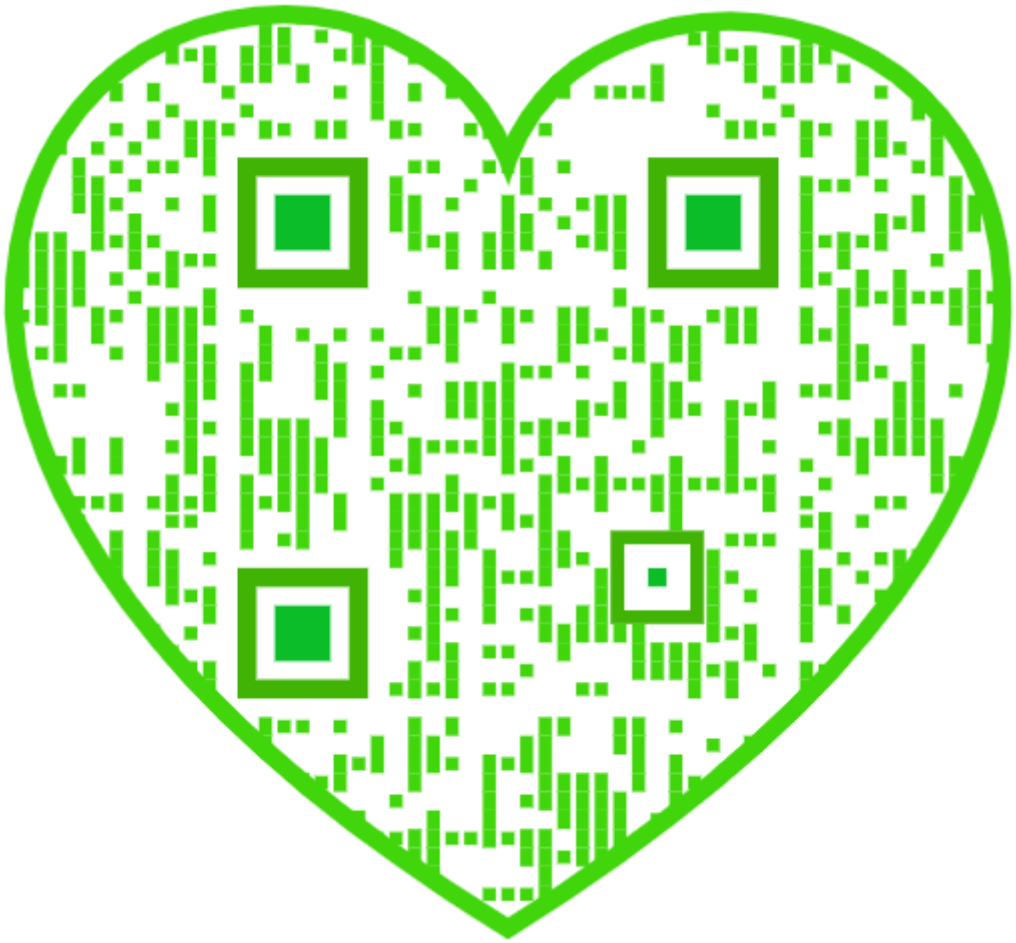

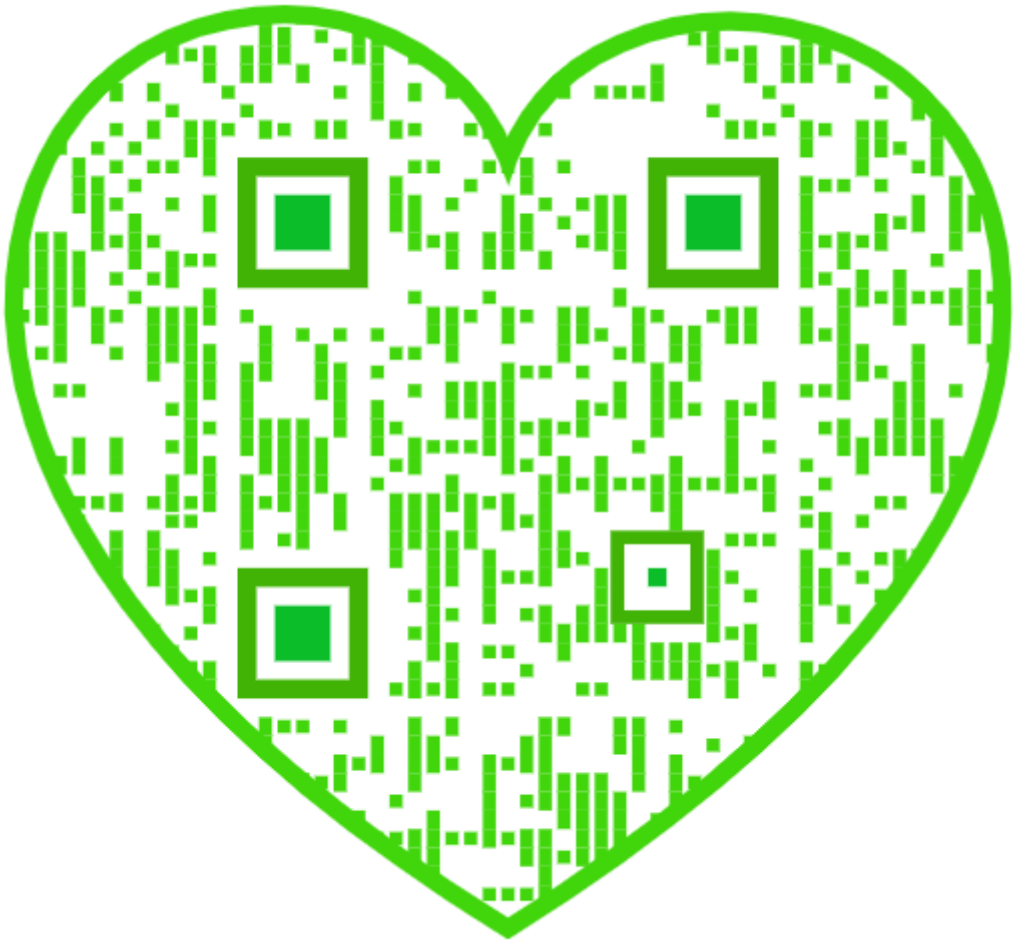

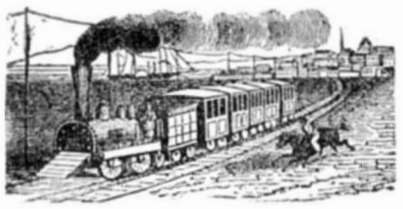

Foreign News.

The steamer Acadia arrived on the first day of this month at Boston, and brought two weeks later news from Europe. There were more failures, bread stuffs had declined and so has cotton. The money market was good. The crimes in Ireland were as numerous as ever. The young queen of Spain was supposed to be in a dying condition—a sword hung by a single horsehair is still suspended over the heads of monarchs. It is reported that Abdel Kader had surrendered to the French—doubtful news. Famine is nearly as bad this season in Ireland, as it was the last. Floods of specie were arriving in London—twelve millien pounds of bullion was in the vaults of the Bank. France, Austria and Prussia were contemplating to interfere with the affairs of Switzerland. A massacre had taken place in Milan. The military had charged upon the people and one hundred and forty were killed.

Improved Mode of Drying Corn.

Mr. C. E. Potter, of Providence, R. I., has secured a patent for a new Kiln Dryer, which promises to be of great advantage. The grain is exposed to a warm dry atmosphere at a low heat for about two hours, yet it dries from 50 to 80 bushels of grain per hour in a most thorough manner, and no scorching. The grain is admitted by a hopper at one end of the kiln to a number of flat conduits of perforated tiles, or wire gauze, and by a current of warm air passing over it there is good ventillation and all moisture carried off. The flat cells are about 14 feet long and the grain moves forward from the end where the moist and hot air escapes to the end where the warm and dry air is admitted, and falls down into conduits at regular intervals by valves opened and closed for this purpose, worked by cams on an axle. It is considered a valuable invention and this opinion is founded on experience of its qualities. We may be able to present an engraving of it with a longer description at some future period.

Hartford Depository of Mechanic Arts.

In noticing the establishment of this excellent Institution in No. 18 of this vol. of the Scientific American, the subject was presented in a prospective light, whereas the Institution has been in operation since the 3d day of May last, and the collection now numbers over two hundred specimens, the products of industry and skill in the Mechanic and Fine Arts. Such an institution is certainly destined to be of great benefit to all who become interested in its operations. It will not only stimulate mechanical genius but lead to the saving of much mispent time, as the machines deposited there will not only excite to rivalry, but improvement, and improvements suggested by what is not, not what has been. It is the misfortune of many inventors to labor for years to accomplish something that is not new but of which they had no knowledge.

Pedler Law.

Vermont has decreed that if any pedler carry and offer for sale any plate or gilded ware, jewelry, watches, or any patent medicines, the composition of which is kept secret from the public, he must pay $60 for a yearly license. Massachusetts has a law nearly akin to this, subjecttng all pedlers to pay a sum, in amount according to the number of counties the seller desires to occupy. Some contend that it is illegal and against the Constitution of the United States.

American Art.

Mr. Powel the artist employed by Congress to fill the remaining vacant pannel of the Rotunda of the Capitol, has chosen as his subject "The Discovery of the Mississippi by De Soto."

The parent who would train up a child in the way he should go, must go in the way he would train up his child.

LITERARY NOTICES.

Patent Laws of all Countries.

By referring to our advertising columns our Subscribers will learn that we are now able to furnish a book containing the Patent Laws of all countries with tables of fees, forms, &c. —It is a valuable book for inventors, lawyers, and Patent agents, and from the repeated inquiries that we have had for a work of this kind, we expect an immense sale for it—address at this office.

Muscoma.

A Romance of the Revolution. By Aria Ashland. This beautiful tale which was originally published in the Weekly Bee, has been issued in pamphlet form, by Messrs. Hotchkiss and Co., 13 Court street Boston. The publishers preface it as follows: "In presenting to the public the beautiful American Romance of Muscoma, or Faith Campbell, we would state that we have been induced to issue it in the present form, in consequence of the great demand for the work, while in the course of publication in the Weekly Bee—a demand which a large circulation could not supply. The style in which the story is written; its faithfulness to Indian Life and Character; and the intensely interesting incidents, together with the ingenious plot, renders it decidedly the best Romance of the day."

For sale in New York, at all the Periodical Depots.

The Children of the Philanstery.

A work of the above singular title has just been issued by Wm. H. Graham, Tribune Buildings. It is a familiar dialogue on the education of children, and from the preface we should judge it a valuable little book.—Price 12½ cents.

Mysteries and Miseries of New York.

Part 2 of this interesting story by Ned Buntline is just published, and for sale at Berfords, No. 2 Astor House.

Chamber's Miscellany.

No. 12 of this popular work by William Chambers, has just been issued from the press by Berford & Co., No. 2 Astor House.

Polished Language in Africa.

The Washington Union in speaking of a grammar of the Gaboon language of a tribe of African negroes says that the grammar exhibits the wonderful fact that these naked savages, are possessed of a language rivalling the Greek in copiousness and flexibilty. It is a little singular that more than half a century ago, Swedenborg gave an account professed to be derived from intercourse with spirits, of a tribe in Africa giving evidence of civilization similar to those said to be displayed by the negroes of Gaboon.

Every thing wonderful now a days must all be credited to Swedenborg. Even the Aurora Borealis that is yet to heat up the Arctic regions of ice and snow according to Prof. Nichol, was all prophecied of a long time ago, if we are to believe some of our wonder loving Periodicals.

Manufacture of Glass.

A mountain of silex has been discovered in Hartsville, Sumner county, Tennessee, which is pronounced by the state geologists to be the finest in the Union. A bill is before the House for the incorporation of a company for the manufacture of glass, and Tennessee bids fair to outrival any of her sister States in the manufacture of glass.

Factories.

The Committee on Manufactures of the Massachusetts Legislature have reported bills to incorporate the Stoneham Manufacturing Company—to increase by $450,000 the capital of the Middlesex Company—to increase that of Ballard Vale Machine Shop by $100,000 and that of the Lowell Machine Shop by $500,000.

The quantity of coal consumed in St. Louis during the past year amounted in the aggregate to 1,454,048 bushels, which sold at an average price of fourteen cents per bushel It is calculated that by means of a rail road from that city to the mines, the article could be delivered to the consumer at about half the above price which would yield to the citizens annually a net saving of about $106,785 36.

Pleasant Ingredients of Mineral Waters.

In a late number of the German annals of Chemistry and Pharmacy, are some observations, tested by mechanical experiments, on the existence of arsenic, Copper, Antimony and tin in mineral waters. Some time since, M. Tripper detected arsenic in the mineral waters of Meskontine in Algiers, and M. Walchner having found that small quantities of copper and arsenic are generally present in various ores of iron, as the hydrated oxide, sparry iron ore, and the argillaceous and bog ores which may be regarded as deposits from ferruginous waters, was led to search for them in the deposits from chalybete springs. These were dissolved in hydrochloric acid, and treated with sulphuretted hydrogen: the precipitate was then examined for these metals in the ordinary manner. In this way, M. W. examined the sediments of the chalybete waters of Griesbach, Rippoldsau, Tienach, Lothenfels, and Carnstadt—as also the hot springs of Wiesbaden, and the effervescent waters of Ems, Pyrmont, Lamschield and Brohl—arsenic and copper were found in all these, and antimony in that of Wiesbaden. These results have since been farther consumed by analysis. M. Will has since detected in the chalybeate water of Rippoldsau, tin, antimony, aresenic, copper, and lead. Beside this, the waters of the three springs of St. Joseph, St. Wencelas, and St. Leopold, yielded on analyziation, proportionate parts of arsenious acid, protoxide, of tin, oxide of antimony, and oxide of lead, and oxide of copper.

Draught in Ploughing.

A correspondent of the Farmers' Cabinet, very justly observes that farmers often commit a great error in shortening the draught too much under the supposition that they lighten the exertion of the team. They may do so, with a cart or sled, the load being in part transferred to the horse's backs. But in ploughing, the plough must be *set* so as to *swim*, without any tendency to rise or sink.—This important object being attained, the length of chain is immaterial.

Economy in Linen Washing.

A correspondent of a Dundee paper writes as follows:—"After many experiments made by myself and others, I find that a little pipe-clay dissolved among the water employed in washing, gives the dirtiest linens the appearance of having been bleached, and cleans them thoroughly with about half the labor, and a saving of full one-fourth the soap. The method adopted was to dissolve a little of the pipeclay among the warm water in the wash tub, or to rub a little of it together with the soap on the articles to be washed. This process was repeated as often as required, until the articles to be washed were made thoroughly clean.—All who have made the experiment have agreed that the saving of soap and labor are great; and that the clothes are improved in color equally as if they were bleached. The peculiar advantage of employing this article with the soap is, that it gives the hardest water almost the softness of rain water.

Ice Crop.

Unless John Frost becomes more crusty, and exhibit some of his freezing acts of kindness to our friends around New York, there will be a sad deficiency in their winter crop. This is not to be laughed at, ice is an article of health, as well as luxury and by its great preservative powers saves to our country and those warm countries to which it is exported a hundred times more money than what is expended to purchase it.

Telegraph.

Telegraph posts between New Orleans and Mobile, have all been put up, and the line was expected to be in operation by the middle of this month.

Iron Furnaces in Virginia.

Five are now in operation in Botetourt county, and others are springing up in various parts of the iron region, under Pennsylvania and eastern managers.

The newspaper is a law book for the indolent, a sermon for the thoughtless, a library for the poor: it may stimulate the most indifferent, it may instruct the most profound.

Curious Fact for Doctors.

A correspondent in one of the Cincinnati papers state sthat Buena Vista battlefield is still covered with bones, coats, pants, shoes, and knapsacks, &c, And what is most singular of all is, that a few Mexicans who were left unburied are still on the battlefield *entire*. Neither putrefaction nor the wolves prey upon them, but they are dried up like mummies. The only way I have heard it explained is, that the Mexicans eat so much pepper that it preserves their bodies from putrefaction, and at the same time spoils them for the taste of wolves. Certainly they do not decay, and the wolves will not prey upon them.

Salt.

Lieut Burke, of the Bombay Engineers, has published a pamphlet, in which he states that one of the salt beds of Scinde contains an area of 3000 miles of salt, of an average thickness of 3 feet, or a supply equal to the consumption of 100,000,000 of people for 1600 years.

A Heavy Anvil.

An anvil for the trip hammer of the Iron and Nail Works of Messrs. Hunter. Morrison & Co.. at Wheeling Va., has just been set, weighing twelve thousand pounds. This exceeds, by two hundred lbs., one set in this city some days since.

If you would keep your hands from chapping during the winter, wash them as often as you please, but rub them "bright dry" each time; don't leave a particle of moisture for the cold air to act upon.

[True, and if chapped rub them with a little flour,—Ed.

Marble fireplaces should never be washed with soap-suds, but with a nice oiled cloth. and rubbed dry with a soft rag.

[Good Furniture treat the same way, a silk cloth is the best to finish with, and the result is a fine clear polish.—Ed.

A towel dipped in hot water and applied to the part affected, will it is said, afford an effective and immediate relief to the painful contraction of the muscles called the cramp.—*Ex.*

Correct.

A whale was killed off Southampton, L. I. on the 20th inst. from a small boat, but the captors were overtaken by night and compelled to abandon their booty.

No Cape Cod boys were there or the whale would have been into oil before this time.

A discovery has recently been made of Cannel coal near St. Louis, Mo., possessing the qualities of the celebrated English Cannel coal: and from a geological survey which has been made, it is supposed to be the largest known body of Cannel coal in the world.

It is said that Mrs. Gaines was so much excited during the delivery of the opinion of the Supreme Court in her favor, that she fainted in the Court room.

Walter Jones, Reverdy Johnson, and S. J. Burr were attorneys for Mrs. Gaines, and it is said their fees are $50,000 each.

Prof. Twoney of the University of Alabama has lately made a tour of that state and has found valuable and extensive deposits of coal, iron, limestone, millstone, freestone, marble of various kinds, and other substances, all capable of being turned to advantage, and adding very immensely to the resources of that State.

The Rev. Mr. Innes of the Free Kirk of Scotland has died from disease contracted from exposure to the atmosphere. He had preached to his flock for six years in a tent, because the grim hearted Duke of Buccleigh would not sell a piece of ground on which to build a church.

Prof. Morse has publisbed a card in the Washington Union recommending certain signs of punctuation to be used for telegraphing.

A memorial asking congress for a donation of land to aid in the construction of a railroad from Lexington, Missouri, to the mouth of the Ohio, is in circulation in Missouri.

A number of farmers around Buffalo, are associating together for the purpose of making a plank road leading to that city. A good move.

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Steel its Manufacture.

Steel is generally made in England from Swedish iron. In this operation layers of malleable iron and layers of coke are placed one upon another in a proper furnace, the air is excluded, the fire raised to a considerable degree of intensity, and kept up for eight or ten days. If upon trial of a bar, the whole substance is converted into steel, the fire is extinguished, and the whole is left to cool for six or eight days longer. Iron thus prepared is called blistered iron, from the blisters which appear on its surface. In England coke alone is used for this purpose; but it has been found an advantage in using one-third to one-fourth of wood ashes, especially when the iron was not of so good a quality as to afford steel possessing tenacity of body as well as hardness. These ashes prevent the steel-making process from being effected so rapidly as it would otherwise be, and give the steel pliability without diminishing its hardness, good wood charcoal needs no wood ashes. The blisters on the surface of the steel, under this management, are smaller and more numerous. If bars, when they are put into the surface, be sprinkled with sea salt, this ingredient contributes to give body to the steel. If the cementation be continued too long, the steel becomes porus, brittle, of a darker texture, more fusible and capable of being welded. On the contrary, steel cemened with earthly infusible powder, is gradually reduced to the state of forged iron again. Excessive of repeating in the forge is attended with the same effect.

The properties of iron are remarkably changed by cementation, and it acquires a small addition to its weight, which consists of the carbon it has absorbed from the charcoal, and amounts to about the one hundred and fiftieth or two hundredth. It is much more fusible than before; and it may still be welded like bar iron, if it has not been fused or over cemented; but by far the most important alteration in its properties is, that it can be hardened or softened at pleasure. If it be made red-hot and instantly cooled, it attains a degree of hardness which is sufficient to cut almost any other substance; but, if heated and cooled gradually it becomes nearly as pure as iron, and may, with much the same facility be manufactured into any determined form.

A great number who are unacquainted with the nature of steel suppose that it will stand more heat than iron but if a steel wire and an iron wire be put into the fire together, the steel wire will be found reduced to a fluid state while the iron is yet malleable, steel is therefore easier burned (as it is called) than iron.

Curiosities.

Iron may be put into a vice and sawed with a saw endwise. The saw should have a thicker edge than back and with uniform teeth one-twelfth of an inch apart. The mechanic must have a vessel of cold water beside him in which to dip his saw often. A bar of iron may be sundered while hot by brimstone.

If strontia is thrown into the flame of a spirit lamp a beautiful purple flame is the result.

A copper plate perforated with holes if held over the flame of ether, will emit a beautiful green flame.

Camphor gives to flame a bluish color.

If a small piece of camphor be ignited in a candle and then placed in a basin af water, it will float and burn and move to and fro on the surface, emitting a fragrant smell. If a drop of oil be let fall on the water, the camphor will suddenly stop

Squaring the Circle.

Gabriel H. Thompson, has presented the following modest petition to the Legislature of Massachusetts:—

"The petition of Gabriel H. Thompson, praying for a grant of ten thousand dollars, to enable him to go to London and publish his work on the great discovery of the true quadrature of the circle, and to avail himself of the rewards there offered. And your petitioner as in duty bound will ever pray," &c

The Senators of the Bay State gave Mr. Thompson leave to withdraw his modest petition.

Brahminical Wonders.

According to Lieut. Wilford, the Brahminical Puranas state the circumference of the earth at 2,457,000,000 British miles; whereas according to our calculation, it does not exceed 24,000 miles These works also tell us of mountains 491 miles high; of a king reigning 27,000 years; of Valvasvatu having lived 3,892,888 years ago, and whose reign lasted 1,728,000 years. The civil list and droits are not stated. Also, of an island in the middle of the earth, 400,000 French leagues long, and as many broad; and of a mountain in that island 400,000 leagues high, and 32,000 wide: of other mountains 40,000 and 280,000 leagues high These latter wonders are in the Bagavadam; and in the same Puranas, there is a tree mentioned, 4,400 leagues high; and again, an island which is 3,300,000 leagues in extent; and another surrounded by a sea of milk, rather more than 12,000,000 of leagues in circumference. These things are taught by the Brahmins as sacred truths, to the people who believe in them.

Ancestry of the British Queen.

During the troubles in the reign of Charles 1, a country girl came to London in search of a place as a servant maid, but not succeeding she hired herself to carry out beer from a brew house and was one of those called tub-women. The brewer, observing a good looking girl in this low occupation took her into his family as a servant, and after a short time married her—He died while she was yet a young woman, and left her the bulk of his fortune. The business of brewing dropped, and Mr. Hyde was recommended to the young woman as a skilful lawyer to arrange her husband's affairs. Hyde, who was afterwards Earl of Clarendon, finding the widow's fortune considerable, married her. Of this marriage there was no other issue than a daughter, who was afterwards the wife of James II, and mother of Mary and Anne, Queens of England.

A Mother's Cry.

We read in the Journal de Cologne of December 2: "Capt. M. was recently informed that his son lay dangerously ill at Berlin. The mother hastens with all speed to the bedside of her son; but alas! he is already dead' and lies extended in his coffin. In the anguish of the moment, she utters a loud cry and falls upon the body. What rapture succeeds to her despair, when she sees her well beloved son, roused from a trance by his mother's cry, revive and open his eyes."

A Stubborn Contest.

Near the Barbadoes islands is a huge white rock,, which from the resemblance to a ship under full sail is called the "Ship Rock." A French frigate, falling in with this rock in the night time, mistook it for an English vessel and commenced firing into it. The echoes of the cannonade were repeated so perfectly that they were also mistaken for the returning fire. The action continued until morning, when each party having received an equal amount of damage, it was thought best to discontinue the fight.

Strange Speculation.

In his lecture on the Sun, Prof. Nichol alluded to the fact that fields of coal have been discovered in the polar regions of our earth, plainly indicating that that portion of our planet was once lighted and warmed by an agent more powerful than any which now reaches it, and which was capable of sustaining vegatation of a tropical character.

The Brain.

The brain itself may be removed, be cut away down to the corpus colosum, without destroying life. The animal lives and performs all those functions which are necessary to simple vitality but has no longer a mind, it cannot think or feel. It requires that the food should be pushed into its stomach; once there, it is digested; and the animal will then thrive and grow fat.—*Wigan's Dualitu of Mind.*

Echoes.

The famous echo in Woodstock, Park, England, repeats seventeen syllables in the day time and twenty at night.

Occupations of English Women.

In the census of returns presented to Parliament, we find rather curious matter relating to the occupation of ladies. We find fifteen ladies entered as "authors," and one as a "professor of the belles letters" Of actresses, three hundred and fifty-seven above twenty. Eighty-nine actresses are stated to be under twenty. Of curiosity dealers, the total return is forty-six, only six being of the fair-sex. This disproportion, however, is amply redeemed by the statement that there are five hundred and eighty-four females connected with the post-office. Four ladies are engaged as bayonet manufacturers, and eighty-six shoe horses. Of botanists, we have in all sixty-five, two of them being ladies The Scotch, too profess to have thirteen female drovers following their cattle to the Southron's markets. Eighty females are entered as watch makers. Under the head 'newspaper editors, proprietors and reporters,' we find one hundred and twenty; only four, however, are mentioned as females above twenty.

Late Hours.

All animals, except those that prowl at night, retire to rest soon after the sun goes down, from which we may conclude that nature intended that the human species should follow their example. It is from the early hours of sleep, which are the most sweet and refreshing, that the re-accumulation of muscular energy and bodily strength takes place, as well as that of due excitability in the brain indispensable to the operation of our waking hours. In order that sleep may be refreshing it is necessary to take sufficient exercise in the open air during the day, to take a light supper or none at all, avoiding tea or coffee late in the evening, to sleep on a hair mattress, with a light covering of bed clothes, in a room freely ventilated. It is well known that the Duke of Wellington, now a hale old man, is accustomed to sleep on a narrow hard pallet; and we believe the couch of her majesty is of the simplest possible construction It is reported that the Duke justifies the narrowness of his resting-place on the plea that when a man wishes to turn, it is high time to turn out.

Steam Ships of War.

Two Steam Navigation, and Royal Mail Companies in England have now afloat and running on various branches of service, from the port of Southampton alone, thirty-seven steam vessels, adapted to war-purposes, and built under contracts with the British government, and at their disposal in the event of a war or invasion. Fourteen of these vessels are of 1800 tons, and 500 horse-power or upwards each. The total tonnage is 45,530, the horse-power 13,910, and they are capable of carrying an armament of 246 guns of from 24 to 68 pounders. There are besides, at the same port, several vessels of a smaller class. This enumeration is of course exclusive of similar vessels which sail from Liverpool and the other ports of the kingdom, and exclusive of the vessels built exclusively for ships of war, and now in the naval service.

Curious Criminal Facts

The Maiden, an instrument by which criminals were beheaded in Scotland, was introduced into that country by Earl Morton, and he was the first person who suffered by it; M. Guillotine, a French surgeon, who gave his name to an improvement of the Maiden, died also by his own invention; and Deacon Brodie, who was executed about thirty years ago for robbing the Excise office in Edinburg, and who really was a man of genteel birth, and in his manners more of the Macheath than anybody who appeared for the last fifty years—this gay deacon or the carpenter of Edinburg, invented the drop by which all the criminals of Britain now suffer; and strange to say, he was the first man who suffered on his own commodious gallows.

The cocoa nut tree supplies the natives of the countries in which it grows with bread, water, wine, vinegar, brandy, milk, oil, honey, sugar, needles, thread, clothes, cups, spoons, basins baskets, paper, masts for ships sails, cordage, nails, covering for their houses, &c. ,&c.

Wonders of Art.

There is a man in London who has a glass eye and spectacles, a wig, one arm and both legs of wood, a nose which is fastened to the skin of the forhead, a lower jaw of silver, an artificial set of teeth, a part of the skull of caoutchouc, and a palate and both ears of the same substance, as well as a large part of the abdomen. We learn that he was formerly employed in supplying a steam engine with coal and in an explosion of the boiler was most horribly mutilated. Dr. Kemble succeeded, almost by a miracle in saving his life, and made him what he now is—Almost an artificial yet breathing man.

One Way to Make a Fortune.

An individual recently deceased in France, who gained the liberal sum of 300,000 francs as follows:—possessed of a small patrimony, at thirty years of age, he retired to the country to improve his few acres of ground. Not content with this industry, he turned his attention to trafficking in sheep, and thereby enriched himself. Every time he bought a sheep he cut off its tail, which served as a meal for his family. The animal after its wool was a little increased in weight was resold at a slight advance. It was thus, that in time, he succeeded in gaining his 300,000 francs. It is true that many sheeps tails must have been swallowed, but the result was not the less satisfactory.—*Boston Bee.*

Singular Circumstanee.

A friend of ours, says the Albany Knickerbocker, a few weeks ago, lost a valuable Newfoundland dog. For days and days he searched high and low, but nothing of "Lion could he find." At last we hinted to him the propriety of whistling for him in front of one of our cheap sausage shops. He did so, and with the happiest results. The very first blow he gave, eight bellonas. two headcheeses, and eighteen pounds of "links" jumped off the stall, and chased him down street, as if Old Nick, was after them. This will learn our domestic butchers to keep their sausages chained.

Baggage of a Man of Simple Habits.

Though the Governor General of India is looked upon as a man of simple habits and manners. when moving on a progress his baggage is described as being carried by one hundred and three elephants, one thousand and three hundred camels, and eight hundred wagons drawn by bullocks, and these escorted by two regiments, one of cavalry and the other of infantry!—*Ex.*

[A friend of ours remembers going to the same Academy with the present Governor General of India when his father was Governor of Canada. At that time he carried all his baggage buckled together with a leather strap, over his shoulder! His habits too were then as simple as now, for he was noted for hitting harder with his fist and firing a snowball with a more unerring aim than any of the young *sovereigns* with whom he associated.

Was it Ether or Chloroform.

In Middleton's tragedy of "Women beware Women," written in 1657, occurs the following passage.

"I'll imitate the pities of old surgeons
To this lost limb, who, ere they show their art,
Cast *one asleep, then, cut the diseased part.*'

The Wife.

It is astonishing to see how well a man may live on a small income, who has a handy and industrious wife. Some men live and make a far better appearance on six or eight dollars a week than others do on fifteen or eighteen dollars.

Employ Your Minutes.

Life is too short to be frittered away in trifles. Let no moment pass unemployed. Sleep for the renewal of exhausted nature, awake to live to the duties of life. Beware of ever indulgence in meet or drink. Intemperance brings no recreation, but serves to exhaust the powers of both body and mind.

The number of poets in the United States is estimated by the Chronotype at 5023. Greece had only one. This shows the fertility of our soil when poudrette is added to it.

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New Inventions.

Improved Rotary Corn Dryer.

Mr. Isaac C. Stover, of Erwinna, Bucks Co. Pennsylvania, has made a great improvement in the Corn Kiln, whereby a great amount of fuel will be saved by the economical manner in which he uses his heat. The grain is dried on a circular plate and kept shifting its position by moveable arms so arranged as to accommodate themselves to the expansion of the metal plate and also by their form to allow the corn to stand on the plate for an instant after it is moved with one arm before it is moved by the other. This is a good feature in the invention and the plan for doing this and the oven are new points, for which he has taken measures to secure a patent.

New Horse Power Reaping Machine.

Mr. F. A. C. Freeman, of New Boston, Illinois, has projected a very simple machine to travel over fields of grain and thresh and clean the grain without cutting the straw.—Where grain is not laid down but stands nicely, this machine may operate well, and where there are such extensive fields of wheat as are to be seen waving like sheets of gold on our Western prairies, the threshing and cleaning of the grain without cutting the straw must be of great advantage. The labor of cutting, raking and binding is great, and where the population is sparse and straw of no value whatever as an article of sale, it would indeed be a benefit to the Western farmer just to let the straw stand out all winter and plough it under in the spring. In this manner, nature would be restored to her exuilibrium by the return of the phosphates to her bosom, contained in the straw.

New Brick Machine.

Mr. Joseph Grant, of Providence, R. I., has invented a machine for making Bricks, which is one of the greatest labor saving machines ever invented. It is entirely new and original and with proper power, (2 horses,) will make more than one thousand bricks in one minute, or thirty thousand per hour, allowing the machine to be half the time receiving the clay. The machine is locomotive and is drawn over the yard leaving three rows of pressed bricks upon the ground as handsomely as though they were laid by hand. It requires only one man to tend the machine. A patent is secured and a machine will be ready to work in two or three weeks.

[The above communication was sent to us for publication and we cannot speak personally of the invention. The great number of bricks made per minute we think must be a mistake.

Leather Bands.

We have lately noticed a very admirable improvement made by Mr. J. Hanly, of this city for connecting separate pieces of the common round bands used on the pullies of our common hand lathes. Mr. Hanly joins two eyes together (doing away with the common hook,) by welding; and by twisting the band into each eye, which has only three threads upon it, fastens it by heating each end in the usual way by the opening or eye still left after the union of the two eyes together. When long pieces of gut for bands cannot be got, this is a good mode of joining these bands together, but the Gutta Percha bands now made in this city and to which we will call attention next week, are by far the best for lathe bands and straps of every description that has yet been discovered.

Pneumatic and Hydraulic Machine.

Mr. William C. Grimes, of Philadelphia, has invented a novel apparatus to be propelled by wind or water currents, and which presents some curious features for accomplishing the transmission of the power of air and water currents. We may be able to present an engraving of it at some future period with a full description.

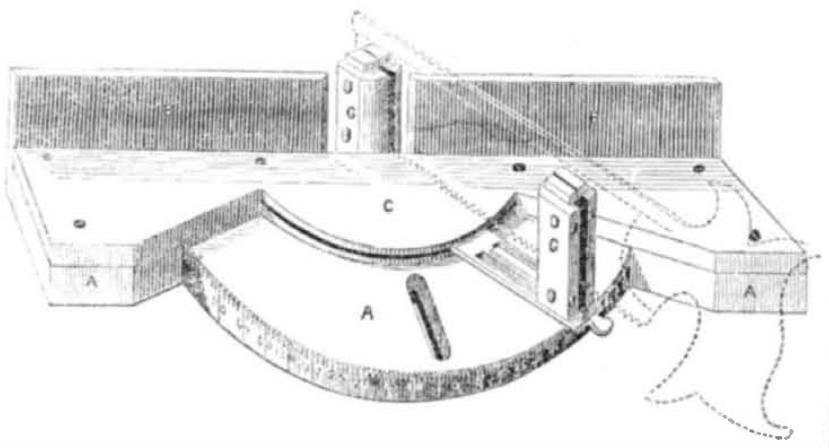
Preventive for Leaky Roofs.

Mr. Joseph Logan, of No. 159 Green street, this city, has invented a very complete contrivance to prevent leaking in the joints of coping stones. The simple apparatus for this purpose, and for which the inventor intends to secure a patent, must be of great benefit in the finishing of the roofs of all buildings. It is well known that a vast amount of goods are frequently damaged in some of our stores from roof leakage. Mr. Logan's plan can at least prevent all leakage between the coping stone joints, and it can be applied more cheaply than the skins of boiled paint, the material that is at present used for this purpose.

New Optical Instrument.

By our exchanges from Worcester, Mass. (a place by the bye which is a complete literary repository,) we learn that Mr. J. P. Paine, a famous optician of that town, has invented an instrument whereby the exact focal distance of each eye is measured with mathematical precision, and the optician is thus enabled to select lenses which will precisely fit each eye, and thus the difficulty proceeding from the difference of the strength of sight in some eyes is obviated. There is sometimes a slight cast in one of the eyes, and this instrument is so arranged as to detect the exact variations by a proper mode of grinding the lenses.

IMPROVED MITRE BOX.



This is an engraving of a new Mitre Box, invented by Mr. Arthur Huston, of Bristol, Maine. It is designed for the purpose of mitreing and cutting angles with the utmost precision by moving the saw in its line of guidance, by guides that direct it to any angle and hold it fast to cut on any line. A A A, is a bed plate, made of wood or cast iron. The centre part is divided into 60 or more degrees of a circle and has a rim of brass slightly raised with notches on it of the degrees and parts of degrees of the bevil of the bed plate. On this bed plate is fastened the saw guides G G, attached to a slide piece and connected together by it. This slide piece is the exact width of the bed plate across the centre of the bevil. The outside guide G, is fastened to the distant side of the bed plate in a socket by a pivot to move in the same. The guide G, to slide on the bevil is kept firm to the rim by a spring which catches into the notches on the rim If this spring is pressed upward, the saw guides will swing or slide from right to left and vice versa and catch on any notch on the rim, as may be wanted. B B, are upright sides of the box to answer a *straight edge*.—C, is an upper plate of wood or brass as the case may be, fastened by screws to the bed plate to hold the slide firm and in its proper place but with a space between it and A, to allow the slide to move snugly. The use of this mitre box is at once plain to every mechanic engaged in wood work

If a board is wanted to be cut at an angle of 45 degrees, let it just be placed in the inside of the box, (the saw is not fastened,) and sawed on the line 30, on which the guides are now fastened, then press up the spring and swing the guide with the saw on it to 15 on the left, and saw your line there, and without any more ado you have a board cut at an angle of 45 degrees, and so on in the same manner to any degree. Mr. Huston has taken meusures to secure a patent, and he intends to construct those boxes of strong material and to have them made so that they will not be expensive. The *saw guides* are fitted with inside cheeks fastened with screws, so that they can be easily taken out and always kept in proper order at little or no expense and with but little trouble.

Cold Chisels for Harness Makers.

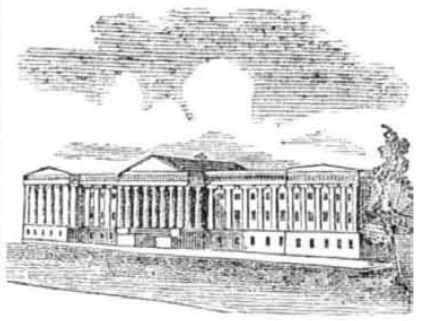
The root and foundation of the construction of every article of manufacture and every machine, is good tools. We believe that America is celebrated for tool manufacture, and with, the exception of saws, we stand perhaps unrivalled now in the manufacture of every other kind of tool, especially hand tool. Yet it is not to be supposed that we have attained to perfection. Our mark is a high one and we must aim high to strike it and by so doing we shall always be coming nearer and nearer the centre of the target, and nearer and nearer we are approaching it. We have been led to make these remarks from observing an improvement in the arrangement of cold chisels for cutting off the shanks of pad hooks, ferrets and screws without injuring the threads, and it can also be applied for cutting bolts for other trades besides Harness making. The whole apparatus is very neat and portable, confined in an iron box, and what is good, very cheap and durable. L. W. Stearns, of North Adams, Mass., the inventor, has used it in his own business for a number of months with the greatest satisfaction and without the need of any repairs.

Machine for taking the Ayes and Nays in Legislative Bodies.

It is a well known fact that the most dull and tedious action of Legislative bodies is the mode and length of time required to take the decision of members upon questions. We know that some will say " we are glad to get members to that point." Be that as it may, and suppose that some members would be a saving to the country if they never said any more than " Aye" or " Nay," this is not the question. The question is, " is there not a great amount of time wasted, of money thrown away and lost to the country by the tedious and dull mode at present used to take the ayes and nays of the members composing deliberative bodies ?" Certainly there is. Any person who has seen members vote two or three times in close succession knows this to be true. To save labor and expense incurred by taking the ayes and nays in the present mode, we are informed that Francis H. Smith, Esq. of Baltimore, Md., has invented a machine to effect this object, which will in a most correct and speedy manner record the votes of members and print duplicate copies at the same time. The plan has been shown to Mr. Winthrop and other members of Congress, who highly approve of it, as they certainly should. It will be a great blessing to the Clerks We will be able to present a more lengthy description of it in a future number. The invention is certainly a desirable one and said to be far superior to any plan ever proposed before to accomplish the same object.

A Mr. Ellermen of London has discovered a disinfecting composition, a preparation of iron which destroys effluvia in stagnant puddles and converts the mud into good manure. The best remedy for effluvia is plenty of clean water and good draining.

There are 17 vessels now on the stocks at Cleveland, Ohio—two steamboats, one propeller, and 15 sail vessels.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending Jan 25, 1848.

To Wanton Rouse, of Thompson, Conn. for improvement in Spinning Frames. Patented Jan. 25, 1848.

To John Abbott, of Boston, Mass., for improvement in making Hoes. Patented Jan. 18, 1848.

To Anthony Ellis Hitching, of New York City, for improvement in apparatus for heating buildings. Patented Jan. 25, 1848.

To Martin Kalbfleisch, of Bushwick, N. Y. for improvement in the manufacture of Prussiates of Potash and Soda. Patented Jan. 18, 1848.

To James L. Duncan, of New York City, for improvement in machines for rubbing Type. Patented Jan. 25, 1848.

ADDITIONAL IMPROVEMENTS.

To Charles Lafferty, of York Springs, Pa., for improvement in apparatus for setting and filing Saws. Patented Aug 21, 1847. Improvement added Jan. 25, 1848.

To Nathaniel Whitney, of Lynn, Mass., for improvement in machinery for making Copper Tubes. Patented June 12, 1847. Improvement added Jan. 25, 1848.

DESIGN.

To Jesse C. Potts, of Albany, N. Y., for De-Design for Cooking Stoves. Patented Jan. 25, 1848.

RE-ISSUES

To Levi Lincoln, of Hartford, Conn , for improvement in the construction of Molasses Gates and Cocks for drawing Liquors. Patented Dec. 10, 1841. Re-issued Jan. 25, 1848.

To Frederick P. Dempfel, of Philadelphia, Pa., for improvement in the construction of Fan Blowers. Patented Dec. 18, 1839. Reissued Jan. 25, 1848.

INVENTOR'S CLAIMS.

Hoeing Machines.

By Moses Spofford of Georgetown, Mass. Improvemont in Machines for hoeing Land. Patented 11th September 1847. Claim.—What I claim is the combination of one or more of the cross-pieces, and their rods or other equivalents, with the rotary hoes the same being used in the manner and for the purpose above described.

Horse Rake.

By John M. Stafford of Pike, N. Y. Improvement in Horse Rakes. Patented 11th September, 1847. Claim—Having thus described the nature and operation of my improvement, what I desire to secure by Letters Patent is, the combination of the shafts or keepers, with the segments of the horse hay rakers above described, not intending, however, by this claim to confine myself to the use of two shafts or keepers, but to make use of two or one as I may think proper, while I attain the same end by substantially the same means.

Spoons and Forks.

By William Gale and Nathaniel Hayden, of New York City. Design for Spoons and Forks." Patented 11th September, 1847. Claim.—Having now described the various devices and arrangements of the same for the purpose of ornamenting the handles of spoons forks, butter knives, fish knives, ladles, and other articles of silver table ware, we will proceed to state what we claim and what we wish to secure by letters patent. First, The particular device as shown in the drawings, and explained above for ornamenting the obverse and reverse sides of spoons, forks, &c. Second. The combination of the form of the handle with the ornaments and the particular arrangements of the devices.

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NEW YORK, FEBRUARY 5, 1848.

The Smithson Institute.

We have had a perfect shower of communications sent us respecting the opinions and suggestions we have already made as to the application of a portion of Smithson's bequest. One gentleman of great respectability belonging to Kentucky, suggests to us the propriety of calling for an appropriation of "$20,000 per annum to test the value of inventions, $1500 for the best treatise upon education for the masses, $1000 for the best commentary on our government, with suggestions for improvement in its organization, $1000 for the best treatise on national intercourse and the best means to advance our national prosperity."

"Suppose now," he says, "the above premiums yearly contended for by hundreds, what an amount of light would be shed upon these subjects—what a mass added to the volume of the knowledge of man." Great truths are these. Surely a better and more profitable way of expending the funds than collecting broken earthen pots and Indian wallets "made long before the flood." The gentleman referred to, says "that a Board of Decision might be selected by the Senate, any member to be at liberty to nominate." A wise suggestion too, and no objection can be made to it.

Smithson left his fortune for the express purpose of advancing *knowledge*, and the appropriation of any part of this money to foster a useless and ambiguous science like Archæology, is a mal-appropriation of Smithson's sacred bequest.

Explosions of Steam Boilers.

Never within our recollection has there been a period marked with so many lamentable steamboat disasters in our country as the past four months. First we heard of the conflagration of the Phœnix on her passage up the Lakes on the 21st of last November, with the loss of 101 lives. Scarcely had the wail of that catastrophe faded from our ears when we heard of the bursting of the boiler of the steam ferry boat at Wheeling, Va., where two lives were lost. Not many lives to be sure, but can we, or dare we put a price upon the life of a single human being, or can we estimate the value of it. But this event was only a prelude to another, and one of the most heart rending and soul sickening accidents that ever occurred. The steamer A. N. Johnson, on her first trip last month from Cincinnati to Wheeling, blew up with a tremendous explosion, and God only knows how many perished. One account in the Cincinatti papers stated that eighty three had perished and another that "more than one hundred lives were lost," probably nearly two hundred. It is not possible for us at present, and probably we never will arrive at the true number who perished there amid one of the wildest scene of human destruction that was ever witnessed. There were seen the dead and dying, and heard the wild shrieks of brave men, lovely women and helpless children, as the flames closed around them and they sunk to rise no more. The Cincinnati Commercial Advertiser stated from a description of one who witnessed the disaster, that there were some saved who in the delirium of their sufferings begged to be shot, and others called for axes to end their sufferings. We can feel for these, we know something of the intense torture of such pains. "On the shore and in the adjacent cornfields were to be seen the most frightful spectacles.—Heads, trunks and limbs scattered around." What a soul melting accident. But the end is not yet. On the evening of the 8th of last month on the Ohio river also, a few miles below Galliopolis, "the steamboat Blue Ridge blew up with a tremendous explosion," and thirty passengers are reported to have perished. Three days before this event the steamboat Planter on the Illinois river, burst her boilers and five persons were instantly killed and a number dangerously wounded. And alas, "the end is not yet." We learn again by the Mobile papers of another sad accident.—On the 18th ult., the steamboat Yallabusha on her passage from Red River to Mobile, was entirely destroyed by fire at Donaldsonville, and it is supposed that forty passengers lost their lives. We have not yet been informed of the real cause of the disaster.

Thus by these six catastrophes probably no less than four hundred lives have been destroyed. What a hecatomb of human victims. Philanthropists and fellow countrymen, we bid you look into this charnel house—this pile of murdered victims, enough to astonish heaven and frighten earth—and we ask of you, "are such sacrifices of human life to be tolerated much longer—does not their cruel and sad deaths demand from us an *investigation* at least into the causes. We profess to be the most civilized nation in the world, let us act up to that profession and not look upon such sacrifices with the callous indifference of barbarians.

Every one of the accidents related, are reported to have been the result of recklessness and carelessness. We perceive that information has been called for by the U. S. Senate respecting explosions in steam boilers, from the Commissioner of Patents, but surely there is not a Senator in Congress who is so ignorant as not to know that we have already an abundance of information regarding the causes of explosions, and the best plan for Congress to adopt to prevent such wholesale destruction of life, is to appoint a Committee with power to send for and examine witnesses who can testify to the causes of explosions, the evils of our present ill regulated steamboat system, and give all requisite information respecting the best mode of remedy for such events.—The Cincinnati Atlas says, "if investigation is commanded by law over the body of a single individual stricken by death in our streets, the necessity more strongly exists where an hundred are destroyed upon our rivers by carelessness or defective machinery." Yes, and the city of Cincinnati will not clear herself of criminality unless she moves with a strong and righteous will in the matter and make some atonement by future carefulness for the human blood that has lately tinged with a deeper stain the turbid waters of the broad Ohio.

We believe that there are Engineers Associations in almost every city on the Ohio and Mississippi, and we have now before us the Constitution of the St. Louis Association.—These associations grant diplomas to Engineers who have been examined and have exhibited a thorough knowledge of their profession. They were established for the purpose of preventing ignorant men from occupying situations as engineers, who were incompetent for the difficult task. The objects are good, but these associations have been inefficient and they want remodelling in every respect. We do not know whether Cincinnati has such an association or not. She certainly should have one, and an efficient one it should be. The press of that city has not been backward to speak boldly in the matter, and we only come forward to hold up their hands. All men of humanity and men engaged in scientific pursuits in this quarter of our continent, are of one mind in regard to the course the State of Ohio ought to pursue at present in the matter, that is investigation, thorough, serious and careful investigation.—We will call attention to this subject, in relation to the causes of explosions next week, and present some important information upon the subject.

Death of Doctor Wells.

Dr. Wells, of Hartford, Connecticut, the discoverer of sulphuric ether to produce unconsciousness of pain in dental surgery, put an end to his existence in this city on the 25th inst. under the most painful and humiliating circumstances. We seldom call attention to such cases, but we cannot forbear to notice with regret the death of a man of no ordinary scientific attainments and one whose name is now associated with "Pneumatic Medicine," and always will be, as he undoubtedly laid its foundation. Ether and chloroform are certainly both injurious to the nervous system if taken frequently, and Dr. Wells had too frequently indulged in etherization and in a fit of temporary mental aberration committed the sad act already mentioned. Such circumstances are indeed humiliating to human nature.

American Iron Ore.

The valley drained by the waters of the Housatonic River, which falls into Long Island Sound, contains valuable beds of iron ore and the same Geological formations extend north to Canada, up the valley by Pittsfield and North Adams in Berkshire, Mass. The quality of the ore is considered good. In Connecticut it supplies 16 blast furnaces. In Massachusetts there are 7 furnaces smelting the same kind of ore, and in Dutchess and Columbia counties in this State a number of furnaces are supplied with it also. In Dutchess county at the Amenia ore bed, the white carbonate of iron has lately been discovered among heaps of refuse ore, thus showing that but little sound knowledge was possessed by those working the bed.

North of of Pittsfield, Mass., some valuable ore beds have been opened and one in Dutchess county in this State. The cost of digging these ores is $1 per ton and the price for the ore delivered at the furnace is generally $3,50 and sometimes as low as $1,50 where the charcoal is high. Charcoal costs from $5 to 7,50 per hundred bushels and it takes about 150 bushels to the ton. All the iron furnaces in Massachusetts have the hot blast. They make one third more iron, and although prejudice is in favor of the old way, it is as good, if not better, than that made by the cold blast.

Two furnaces are building in Poughkeepsie on the North River, to which ore is to be transported from the beds on the eastern line and smelted with anthracite coal. There are two furnaces of the Stockbridge Iron Company 32 feet high, and 8 feet across the boshes, that smelt 18 tons per day and will soon do more—they use charcoal only. Ore from the State line will soon be carried to be smelted at Hudson on the North River, by anthracite, as charcoal is becoming scarce. There is a great deficiency of scientific skill among those who conduct the mining and smelting of these ores. A large quantity of most beautiful Hematite ore was once sent from Maine to one of the Berkshire furnaces and condemned by the smelter because it did not smelt just the same as the kind that he had been accustomed to work at.

In early times these ores were reduced in Connecticut in forges, and the Indians were once employed to pack the ore in leather bags and carry it to the bloomeries.

At Kalamazoo, Michigan, a rich bed of ore has lately been mined and a furnace put in operation. The metal produced has been reported to us as being equal to any of the Eastern blasts. It will at least be found more profitable than the speculative gold mines said to have been discovered in that State.

Iron Mine.

A valuable iron mine has been lately discovered on the Farm of John Bremner two miles from Emaus, on the Lehigh Mountain, also veins of the sulphate and sulphuret of iron. The veins of the pyrites are about 1 foot thick run east and west and stand up like a wall. Veins generally run from Southwest to Northeast. The iron mine is of very rich ore, yielding 82 per cent and of the kind called Pleasant Magnet.

Yours, &c. W. E. B.

Consumption of Wood by Locomotives.

Few of our readers, we presume, are aware of the immense quantities of wood consumed by the various railroad companies between Albany and Buffalo. The Utica and Schenectady consume about 25,000 cords of 2 ft. wood per annum; the Auburn and Rochester road, about 15,000 cords; and the Tonawanda road, 8,000 cords. The other roads consume probably, from 30,000 to 35,000 cords—making the whole amount upwards of 80.000 cords per annum. This immense draught upon our "woods and forests," must soon cause an advance in the price of fuel; indeed: the price of wood has been steadily advancing in this place for the last year or two, and will soon come to be as important an item in house hold expences as it is to cities.—*Batavia Times.*

Honor to whom Honor is due.

No sooner has chloroform been discovered, than numberless names are put forward as the original inventors, in order to rob the real discoverer of justly deserved merit, Thus it is now rumored that Liebeg and Dumas and some others discovered it before Professor Simpson. It is just the same with every invention, and there are some who would refuse James Watt the honor of having built the first complete steam engine and Fulton the first successful steamboat, because steam had been known before and had lifted the lid off some tea-kettle In like manner too has the inventor of the Electric Telegraph had the same ungenerous opposition. We do not like to see envy or avarice do injustice to inventors. The man who puts any new invention into successful operation, should never meet with selfish opposition, but alas for poor human nature, such men are just the very persons whom the world keeps always kicking.

Western Manufactures.

It is contemplated, the Chilicothe, Ohio, Gazette says, to erect an establishment there for the woolen manufacture in all its branches.

In Zanesville, Ohio, there is one cotton factory and arrangements are completed for the establishment of a new Rolling Mill. There are also manufactories of glass, stoneware and a number of other articles in Zanesville.

A bill is before the Ohio Legislature for the establishment of the Ten Hour system, something like the New Hampshire bill.

In Newport, Kentucky, we have been informed, there is a silk factory in healthy operation. Satins in pieces, handkerchiefs and scarfs and sewing silk, are manufactured of a superior quality and made from cocoons grown in that state. In looking on the map of the United States and comparing our climate with the silk growing regions of the old world, we are convinced that too little attention is paid by us to the culture of silk. We shall call attention to this subject again.

Western Enterprise.

HARMAN, (Washington Co.) OHIO.

DEAR SCI.—A company has been formed here recently for the purpose of manufacturing Buckets and Tubs upon a large scale, and will probably employ some 20 to 30 hands.—A culvert is also nearly completed around the dam at the mouth of the Muskingum, for hydraulic purposes. It is contemplated to put up a saw mill the coming season. The "Marietta Ship Company" have a fine brig on the stocks, nearly completed. The vessels built by this company, on the banks of the Ohio, 1800 miles above "salt water," will compare with your Eastern craft for model, speed, material, style of finish, and for cheapness.

Yours, &c. S. T. J.

Mr. Kinney, member of the Legislature of Mass., from Royalston, is anxious to establish a law for the punishment of suicide. He proposes that all self-murderers shall forfeit their bodies for dissection.

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For the Scientific American.

Perfection of the Human Frame.

Beauty is a property of animal forms, that is, the provision which is made to adapt their appearance to the perception of the animals with which it converses. The bones are covered, the bowels concealed, the roughness of the muscles smoothed and softened, and over all is drawn an integument which answers the purpose of concealment. Could we view the mechanism of our bodies through the skin, it would excite our fears. Durst we make a single movement if we saw our blood circulating, the tendons pulling, the lungs blowing, the humors filtrating, and all the assemblage of fibres, valves, &c., which sustain an existence, so frail? A surprising perfection of the animal mass is the *package*, by means of which several operations are going on at the same time: yet the case containing the machinery is rolled and jolted about without any injury to the mechanism. The whole must, therefore, be firmly packed together. Examine the contents of the trunk of any large animal, the heart pumping at the centre at the rate of eighty strokes in a minute; one set of pipes carrying the stream away from, and another bringing the fluid back to it again; the lungs performing their elaborate office distending and contracting their many thousand vesicles, by a reciprocation which cannot cease for a moment; the stomach exercising its powerful chemistry; the bowels propelling the changed aliment; collecting from it as it proceeds, and transmitting to the blood an incessant supply of prepared and assimilated nourishment; that blood pursuing its course; the liver, the kidneys, &c., drawing off from it their proper secretions.

The great art in packing, is to prevent one thing from hurting another; for this end, the head, chest, and abdomen of an animal body is provided with membranous partitions which keep the parts separate. This most curious and important provision is visible in the entrails, which one would think were in danger of being injured by every jump or fall. The danger is, however, admirably warded off. The intestinal canal, throughout its whole process is knit to the edge of a broad flat membrane, called the mesentary, like the edge of a ruffle, and being four times as long as the mesentary itself, it is what a sempstress would call "gathered on." The mesentary sustains the small vessels, arteries, veins, &c., which lead from or to almost every point of its coats and cavity, and this membrane is strongly *tied* to the first three vertabrae of the loins PHYSICIAN.

New Light for Ships.

A gentlemen of the French Navy, named M. Gaudin, has invented a light for the purpose of preventing accidents at sea, which appears to be a most important and desirable object and cannot but commend itself to the commercial and naval marine of all nations. The apparatus consists of a reservoir of oxygen from which the gas flows under a pressure of mercury and enters a flame produced by spirits or camphene, through a small aperture at the axis of the wick, and the light thus oxygenated is thrown upon a piece of magnesia fasted to a fine platina wire. The lamp in which these are placed has a reflector and the whole is enclosed with apertures for air and for safety. This light the inventor thinks may be advantageously applied to railroad locomotives as well as vessels at sea.

Horse Power Hoe.

Hoes to operate by horse power are made by Garret & Son, Leiston Works, Suffolk, England, for which the Royal Agricultural Society have awarded premiums. They are constructed upon the lever principle, each hoe working independently of the other, and although they look complicated, they really are not so, but easily managed and not liable to go wrong. Two men and two horses will hoe nine acres per day, the work for both men and horses being easy. Comparing it therefore with hand labor, the cost does not exceed one half, while the work of the hoe in point of execution, is stated by our informant to be greatly superior, as it can be regulated to any depth. The economy of its labor, however, is not of so much consequence, as the circumstance of being able to get the work performed where actually required.

Chinese Peculiarities.

A foreigner has just started a newspaper in the Chinese language. Whether it will succeed or no remains to be seen. It is a novelty to the people. The only paper published by the Chinese that can at all be depended upon is the Pekin Gazette. This is publlshed at irregular periods at the Capital, and thence distributed throughout the Empire. It is a matter of great importance for the Mandarins to secure an early reading of the Gazette, in order that they may be enabled to proceed in their official duties; for it generally seems that the only means by which the officers of government arrive at a knowledge of the will of their sovereign, is through the medium of that Gazette.

Express riders are in readiness at Pekin to carry the Gazette in different directions over the Empire as soon as published. The same rider carries the Gazette from Pekin to any one city, as for instance, Canton, performing the distance on horseback by means of relays of horses at short distances. The distance from Pekin to Canton is performed in six days, riding incessantly day and night; it proves fatal to a great portion of the riders. As a general rule, no rider is able to make more than two trips, as he either dies or becomes perfectly disabled.

A high Mandarin who is under the necessity of securing an early perusal of the Gazette, pays not far from $20 per month for his paper, whereas those who are able to defer the perusal to a later date, pay proportionably less, say $3 per month.

It is generally filled with court gossip and court ceremonies, alike insipid and uninstructive.

Heroism.

Mankind are not acquainted with their own nature. We have progressed in inventions and have advanced in the science of civil government, but are there not hearts still pining in misery and bosoms heaving with distress.—Go to the bedside of the poor invalid and learn a lesson of true heroism. Yes, 'tis there that the soul of man can drink in some feelings of that fate which awaits us all. The excitement of battle may lead men to brave death fiercefully, unthoughtfully, but what a heroism that is which can calmly look death in the face and smile at the grim monster as inch by inch he steals through the avenues of the system and breaks to pieces the "wheel of the cistern." This is heroism. But there is a nobler heroism still. The man who can dare death in the lazaar house of disease in ministering to the woes and sufferings of others, is a true hero—one of God's heroes. The man who can dare to be alone in a cause he thinks right though all the world were against him, is a true hero. The man who can die for the truth amid the jeers and scoffs of a multitude is a true hero. The man who leaves his native land for an uncertain home in another, or to teach others a more pure philosophy and religion with nothing but persecution as his earthly portion, is a hero; and the man (and how many these are among us) who amid poverty and lowliness of lot struggles day after day for his wife and little ones without scarce a hope, or a thought beyond the narrow bounds of his poverty stricken home, is also a hero and a true hero. They who have braved the frowns of fortune or the bitter iron persecution of opinion, because of physical infirmity, or what is more heart rending, the soul-eating canker of neglect, are truly heroes—more so, indeed, than those who have lived and died upon the breath of popular applause.—*Glen Ruther.*

Scientific Coincidence.

In 1815 Captain Smith ascertained that the height of Mount Etna is 10,874 feet. The Cutanians disappointed that their mountain had lost nearly 2000 feet, would not believe it. In 1834 Sir John Herschell, who was not aware of what Capt. Smith had done, determines the height by a careful barometrical measurement and found it 10,872½, a difference of 1½ feet. Herschell called this a "happy accident," but Dr. Wollaston justly remarked "that it was an accident which would not have happened to two fools."

Winter Quarters of Miners in the Highest Andes.

As it was in the middle of the summer, I could not help reflecting what a dreadful abode this must be in winter, and I inquired of our leader and of the miners concerning its climate in that season. They at first silently pointed to the crosses, which in groups of two, three, and four, were to be seen in every direction; and they then told me, that although the mine is altogether inaccssible in winter, for seven months, yet that the miners used to be kept there all the year. They said that the cold was intense, but that what the miners most dreaded was the merciless temporales, or storms of snow, which came on so suddenly that many miners had been overtaken by them, and had perished when not 150 yards from the hut. With these monuments before my eyes, it was really painful to consider what the feeling of those wretched creatures, must have been, when, groping about for their habitation, they found the violence of the storm unabating and irresistable. It was really melancholy to trace, or to fancy I could trace by the different groups of crosses, the fate of the different individuals. Friends had huddled together and had thus died on the road. Others had strayed from the road, and from the scattered crosses they had apparently died as they were searching for it. One group was really in a very singular situation During a winter particularly severe, the miners provisions which consist of little else than hung beef, were gradually failing, when a party volunteered, to save themselves and the rest, that they would endeavor to get over the snow into the valley of the Maypo, and return, if possible with food. They had scarcely left the hut when a storm came on and they perished. The crosses are exactly where the bodies were found. They were all off the road. Two had died close together; one was about ten yards off, and one had climbed to the top of a large loose fragment of rock, evidently to look for the hut on the road. The view from San Pedro Nolasco, taking all together, is certainly the most dreadful scene which in my life I had ever witnessed.—*Sir Francis Head's Journey across the Pampas.*

Improvement of the Gipsies.

A society has been formed in England for the purpose of attempting the moral and religious improvement of the Gipsies. At a meeting of the society not long since, in Brighton, the Rev. Mr. Crabb addressed the society, and stated these facts.

He said that in England, the origin of the Gipsies was enveloped in darkness, but that it was known that they appeared in Switzerland in 1418—from which country, they had however, almost entirely fled during the reign of Napoleon, who ordered them all to be taken into the army. Mr. Crabb denied their Egyptian origin, and traced them from the Sudhas in Hindostan, both in their physical configuration and dialect, and related as an instance of the latter, that Lord Teignmouth once said in Hindostan to a young gipsey girl, 'you are a great thief.' The girl replied without a moments hesitation, 'No, sir, I am not a thief, but I live by fortune telling.'

Truth.

Truth courts investigation, but error shrinks from scrutiny. Truth fears no evils from the most rigid examination, but error always fears the consequence. Truth is immutable, and will stand criticism. Truth, like its author, is eternal, and will exist amidst the wreck of matter and the crush of worlds, while error will be swept away with the refuge of lies. The more you examine truth like gold the brighter it shines. Truth is never tarnished by inspection, but discovers the more splendor. Any system which shrinks from scrutiny discovers corruption in its premises, and is unworthy the attention of an intelligent mind. A certain writer has said with the utmost propriety; "He that will not reason is a bigot; he that cannot reason is a fool; and he that dares not reason is a slave."

"The steed called lightning (says the Fates)
Is owned in the United States,
'Twas Franklin's hand that caught the horse;
'Twas harnessed by Professor Morse."

Trees.

At the Cape of Good Hope a tree of peculiar beauty grows, called the silver tree. At a distance its leaves present the appearance of silver and sparkling with diamonds. On approaching near the spectator finds the leaves downy, and of a silvery hue. At the apex or point of each leaf a small globule is suspended; and upon shaking the tree the drops fall off but are immediately renewed by collecting vapor from the atmosphere. Even in its driest state and under a burning sun, nothing but absolute observation can give a correct idea of the beauty of that tree.

The Banyan tree of India is, however, the greatest natural wonder of the arborial world.—Originally a single trunk, there falls from each trunk a fibre or vine, which on reaching the ground takes root and forms a new trunk. This being continued as fast as the trunks become sufficiently strong to send off their branches, the trees eventually extend over several acres. That near Bombay is large enough to shelter ten thousand troops.

TO CORRESPONDENTS.

"H. S. of Ohio."—We are not in possession of the specification of Mr. Wall's Patent and have not yet ascertained whether the electric process toughens or hardens. When we get out the specification, it will be noticed if of sufficient importance. Mr. Wall resides East India Road, Middlesex county, England.

"L. F. M. of Ala."—We have sent the Constitution of the New York Mechanics Institute. The wind ship was not flattered as you would observe by us. It was not new either, but these things do good for all.

"R. W. P. of ———."—In some future number we shall publish receipts for tempering tools of steel. There are a great variety of plans and opinions on tempering. The tempering of silversmith's rollers, is kept a pretty close secret.

"M. O. P. of N. H."—We have seen a great number of perpetual motions, but there never has nor never will be one made to be of any service as a propelling power. There is no such a thing in the Science of Mechanics as a power creating a power superior to itself. We would sincerely recommend all mechanics to study the first principles, you appear to have a mind ingenious and inventive, only direct it right. Had we room in our columns we might explain the impossibility of your machine being a perpetual motion, but the operation will satisfy yourself.

"E. S. E. of N. Y."—There is no apparatus with which we are acquainted that is used for drying tan bark for fuel. The only profitable way would be such a plan as you suggest.

"D. E S. of Mass."—It is not possible to tell how many modifications of the endless *chain wheel* there is. A Caveat filed in the Patent Office will secure the invention for one year, unless application is made by some other person for the same thing. In that case the Commissioner of Patents will inform you and you will have to make the application for your patent within three months after said notice. A Caveat costs $20 and then $10 more when you make application for a patent.

"E. B. of Conn"—We are much obliged to you for the promptness of your answer and the information contained in your letter.

"W. E. B. of Pa."—By your arrangement of the windlass, &c., you may expect that no gain of power can be the result. If you examine any treatise on the wheel and axle you will be satisfied of this Why not use a Steam Engine for drawing up the ore. It would be as cheap as manual labor, or why not apply horse power. There is as little friction in the straps as in cog-wheels. Do not go to any expense in patenting any machine until it is fully tested. It is best to be careful in this respect. Much obliged to you for the information sent.

"F. H. S. of Md."—We hope to receive a notice soon of a more full description of your valuable inveniion.

"N. M. of Mass."—In eight days after we get your letter the information will be received. Be particular about the principle, and state it clearly in your next letter, as a great many patents have been taken out for stoves.

"R. T. of Ky."—The French mode of pre-

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serving wood is by corrosive sublimate injected into the pores of the timber. For this purpose the wood is put into a strong iron vessel and all the air extracted from it with an air pump, and then the corrosive sublimate let into the chamber when it fills all the pores entirely up. It is then dried completely in a large oven for the purpose. Alum answers nearly the same purpose, treated in the same manner, only it must be submitted to a great degree of heat afterwards This will render the wood nearly as durable as stoneware. The latter process is not expensive. The chloride of zinc has been also used advantageously as a wood preservative, and for shipping purposes is better than corrosive sublimate. The latter plan is practised at the Woolwich Dockyard England.

"N. W. of Va."—We are glad to hear of the progress of your invention. It is very valuable, and we shall be happy to procure as you desire, an engraving when you send the model.

"S. J. of Conn."—You can be furnished with the back numbers you want and if you send down we can get them bound. Your idea of the cast and malleable iron shafts has been patented but a short time ago, and we shall publish the claim in regular file.

"W. W. of Geo."—Address D. L. Farnum, 29 Fulton street, this city.

"J. H. of N. C."—We have received your communication and the box of your valuable waterproof blacking.

"E. B. of Ohio."—We shall notice your invention next week.

"B. S. of Little Falls, N. Y."—We have received your letter and delivered your message. Accept our respects.

"C. E. B. of N. H."—We were informed some time ago, that alhough the paint referred to was cheap in price at first, it was not so durable, nor as cheap in the end as that which cost more. This is all we can say about it at present.

"S. T. J. of Ohio."—We shall send you the information by mail.

"S. D. B. of Conn."—The Gutta Percha is not as cheap as we would like to see it, owing to the fact that the demand has been greater than the supply. By weight $1 per pound is charged, purified, which we can get. It is a non-conductor, but we have not yet made experiments regarding the precise effects of different acids upon it. Sulphur hardens it.—Throughout the last volume of the Scientific American we have given information in a series of articles respecting its manufacture and uses, and we perceive that a number of periodicals are presenting the subject as new, that we published six months ago.

"Z. M. C. of Mass."—Next week expect an answer.

"C. S. B. of Pa."—Your street sweeping machine will appear next week with an engraving.

"W. H. C. of Mass."—Use mastic instead of copal varnish, and if you do not wish it to come through the drawing paper, size with isinglass, or size made of shreds of parchment.

We do not answer anonymous communications, but if "A Subscriber" consults Scribner, or Brunton, he will find calculations of the relative weight of pipes and the relative strength of the same. They are to be found in any handbook or Mechanic's Companion, and a little calculation will enable him to arrive at the result. In consideration, however, of a desire for information on this subject we shall publish some statistics in a future number.

A number of communications are on file and will be answered as promptly as possible. This is a busy period with inventors.

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Rights of territory, patterns of wood or iron for casting, and horse powers, for sale by the subscriber, or by Henry Olds, of Syracuse, N. Y., my authorised Agent.

DANIEL WOODBURY.
Perkinsville, Vermont, Jan. 5, 1848. j22 6t*

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Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

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For the Scientific American.

Enamel Fluxes.

Enamel painting differs from all other kinds in the vehicle employed for the colors, and bind them to the ground they are laid upon. This is glass or some vitreous body which being mixed with colors and melted by heat becomes fluid and having incorporated with the colors in that state, forms together with them a hard mass when cold. It answers the same end in enamel that oil or size does in other kinds of painting.

The vitreous body used for this purpose is called a flux, There are two kinds of flux, *soft* and *hard*, the former easier fused than the latter. It is a perfection of a flux to run or melt easily. It is positively necessary that the enamel of the ground should be considerably harder than the mixtures for the colors, for if they both melt with the same degree of heat, they will necessarily run together. The fluxes too should correspond to each other so that there should be corresponding fluidity.

It being required that a body painted in enamel should undergo a heat sufficient to melt soft glass, the matter for such a purpose, are metals, porcelain, hard glass, &c. When the metals are used as a body, and the enamelling to be of various colors, it is necessary that a ground of white should be laid on the metal and which must be of a vitreous nature but harder than the flux for the colors.

A great art in enamelling, is a knowledge of the degrees of heat that are required for the different kinds of burning.

Melting pots for fusing fluxes or colors are made very good from tobacco pipe-clay and fine sand ground to powder, which must be tempered with water and well mixed together. The dimensions must be regulated by the quantity of matter to be fused. They are conical in shape, rather deep than shallow, and made from patterns of wood. When they are formed they must be well dried and thoroughly baked before they are used. Muffles are also necessary as well for the burning of the grounds as the paintings in enamel. The use of muffles is to preserve the enamel from external injury. They are made of the same material as the melting pots. The common muffle is a flat square piece bent into the form of an arch so as to cover the enamel to be burnt. This is moulded by a wooden mould, working it with a flat knife till it is moderately dry and firm. The muffle should have a bottom, but it may be of a separate piece, and having a margin round the upright part of the muffle. An inside muffle is also used into which the work is placed and all closed nicely up when the work is in.

Coffins is another term for larger muffles for burning large quantities, and the shape depends much on the nature of the work to be done and the inside muffles must be so constructed as to be moved easily into and taken out of the outside muffle by tongs with points bent at right angles.

Red lead is used as a fluxing body for grounds of enamel, and also as a compound for some colors. For this purpose it should be pure and to prove the purity it may be known by the brightness of its color, or else if an ounce is put into a crucible with equal bulk of charcoal mixed well together and covered with another crucible, kept in the fire for some time and then taken out, it will be found that the lead is reduced to its metal and will show by its deficiency of weight, by the law of oxidization, the proportion of adulterating matter.

This flux renders the enamel soft and is not fit for many uses.

Borax is a salt of peculiar qualities, it promotes vitrification, and the fusion of any glass even after being vitrified in a greater degree than any other substance known, on which account it is of the greatest consequence for enamel fluxes. It requires to be first calcined for this purpose which can be done by a moderate heat, but before used to mix as a flux it must be well powdered. Borax is perhaps the best workable flux known as it can be used for the softest and hardest colors when proportioned in the mixtures.

Salt is used for a glazing flux. It is of great use, extremely fluid and not liable to crack.

Arsenic and nitre are also used as fluxes,—but red lead, potass, borax and common salt will answer every purpose.

White sand finely powdered, or flint calcined to whiteness and immersed till cold in water, and then powdered, are substances used for forming the body of enamels. Also a kind of stone called by the French *moilou*, but found plenty in America, and forms the *upper crust* of freestone quarries.

Putty, or calcined tin are used for white enamel grounds. The purity of calcined tin is tested by fusing a quantity in a crucible with tallow until the tin regains its metallic state when the grease may be burned away, or made soapy by an alkali, and the impurities thus detected. Calcined tin is often mixed with white earth for common use. But if tin is adulterated with white lead it is not so easily detected, but can be done by fusing the two in a covered crucible and detecting the lead, if there is any, by it becoming, when removed from the fire, a yellowish or brown color. Tin is calcined by submitting equal weights of tin filings and nitre in a melting pot. The tin must be added gradually, as there are small explosions as it is added, and when all are mixed and the explosions have ceased it must be continued to the heat some time and constantly stirred, then poured out, dried, well pounded and bottled up for use. Antimony can be calcined, treated in the same manner as tin, but only 1 part to 3 parts of nitre and the crucible kept red hot. Tin however, is better.

These are substances which may be used commonly for enamel bodies. Arsenic calcined and prepared will also answer, but it is not much used, and the above simple substances will answer both for common and uncommon purposes.

For the Scientific American.

Black Varnishes.

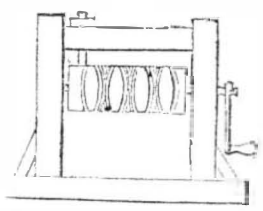
Black Japan.—Set in a pot 48 pounds of asphaltum and as soon as it is melted pour in 10 gallons of linseed oil, raw. Keep a moderate heat. Fuse 8 pounds of gum anima in a gum pot mixed with 2 gallons of hot oil and then pour this into the set pot. Afterwards fuse 10 pounds of dark sea amber in another pot and keep stirring it while fusing with and whenever it appears to be overheating lift off the pot for a few minutes. When this is completely fused mix in 2 gallons of hot oil and pour it into the set pot also and continue the boiling for three hours longer and mix red lead for a drier. Take it off when this is incorporated, let it cool and add turpentine to working consistency.

Brunswick Black.—Put 28 pounds of common pitch and 28 pounds of asphaltum made from gas tar into an iron pot and boil both for 5 or 10 hours to evaporate gas and moisture. Then add gradually to it 10 pounds of litharge and 10 pounds of red lead and boil for three hours until it will roll hard. When it is cool add turpentine to working consistency. This is for engineers and founders and will dry very quick. A better kind is made by putting 45 pounds of good asphaltum in an iron pot over a slow fire for 6 hours. Into another pot boil 6 gallons of boiled linseed oil into which is added slowly 6 pounds of litharge until it feels stringy between the fingers, then pour it gradually into the pot with the asphaltum and let the mixture boil until when taking it out, it will roll hard, when it must be left to cool and then the turpentine may be added to working consistency.

Black Varnish for the iron work of carriages.—Put 48 pounds of native bitumen (asphaltum) in an iron pot and boil 4 hours.—During the first two hours introduce 7 pounds of red lead, 7 pounds of litharge, 3 pounds of dried copperas and add 1 pound of coarse gum and 12 gallons of boiled oil and continue the boiling. Test it like the previous process when in like manner it is prepared for use by the turpentine.

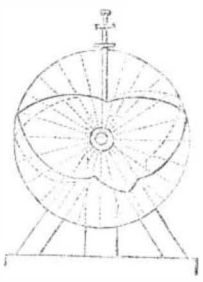
Black varnish for leather, such as that made for boots and shoes and carriage leather is made, by dissolving shellac in alcohol and mixing a proper quantity of ivory black, or lampblack for a coarser kind, and it may be diluted with water to working consistency to be applied with a piece of sponge.

MECHANICAL MOVEMENTS.



This cut represents a horizontal cylinder, having two reverse threads or grooves cut on it, which necessarily intersect twice in every revolution. Under this arrangement a point intersected in the groove will be traversed from end to end at a speed dependent on the revolution of the cylinder.

Eccentric Motion.



This cut represents a plan for producing reciprocating rectilinear motion. The wheel upon the axle turns uniformly in one direction but a rod attached to the tappet piece or cam, will not have a uniform motion but be guided in its motion according to the shape of the tappet, and the velocity will vary from the same cause. Thus if a rod is attached to the curve of the tappet and the rod constructed so as to move perpendicularly in guides, as the wheel revolves the rod will move alternately in opposite directions through the guide with the required velocity, and the velocity will depend, as every person will perceive, on the form of the tappet. The *rose engine* to turn a lathe is constructed on this plan and it is also employed in spinning machinery

To Extract Lamp Oil from a Dress.

If lamp oil *is* spilled upon a dress that will not be injured by wetting, lay it immediately in a small tub of cold water. A portion of the oil will be seen to rise to the surface; then pour off the water, replace it with fresh and still more oil will be seen floating on the surface. Again pour off the water, and fill the tub anew, repeating the process until no more oil can be discovered on the surface. Then take out the dress, wring it well, and dry and iron. No washing is necessary.

If lamp oil, tar or any other grease is spilled on a white dress, it can be eradicated by washing and boiling in the usual manner.

To take lamp oil out from a silk dress, any that should not be wetted, nothing is better than to turn the gown on the wrong side, and cover the place with powdered Wilmington clay; rub it on with your finger the straight way of the threads, to prevent the silk from fraying. At the end of an hour brush off the clay and put on some fresh. By repeating the application a few times, the oil will disappear.—*Exchange.*

The receipt to take out the oil from the silk dress is good, but soap-stone dust placed upon the oil, or grease spot, covered with a piece of brown paper and a hot iron placed upon this (not too hot) will cause the grease to be absorbed by the dust by a kind of capillary attraction, and thus remove the oil or grease more easily than by the above process. When a gingham dress gets oil on it, wash it in strong cold soap suds. The suds must feel slippery in the hand. No cold water can take out oil, and suds of fine soap, used cold for washing and afterwards well rinsed, instead of injuring good colors, will brighten them. A little alum added to the last rinsing water, will both clear up green and red shades and give the starch a fine crisping hardness. Tar or pitch may be removed by first softening with butter and then washing with soap, no other way excepting using olive oil instead of butter.—Ed.

Questions and Answers.

Q. Why does water thrown on a brisk and flaming fire apparent increase the combustion?

A. Because the water is converted into steam, which expanding and mixing with the flame, causes it to spread out into a much larger volume than it otherwise would have occupied.

Q. Why does sunshine extinguish fire?

A. Because the rays engage the oxygen which had hitherto supported the fire.

Q. Why does a fire burn brisk and clear in cold weather?

A. Because the air being more dense, affords more nourishment to the fire.

Cure for the Bite of a Mad Dog.

Take of the root of allacampane one ounce and a half, cut it fine, then boil it in one pint of new milk, down to a half pint; take this in the morning, fasting, and eat no food till four o'clock in the afternoon. This medicine must be taken every other morning; the two last doses must weigh 2 ounces each —*Pennsylvanian.*

The Pennsylvanian says that the above was received from a gentleman who had its virtues proved in many instances.

It is to be hoped that but few will need to try the above experiment yet it is simple and worthy of some consideration, only it would have been well to have stated about the number of times requisite to take the draught to effect a cure.

Experiment with a Tulip.

The bulb of a tulip in every respect resembles buds except in their being produced under ground, and include the leaves and flower in miniature, which are to be expanded in the ensuing spring.—By cautiously cutting in the early spring, the concentric coats of a tulip root, longitudinally from the top to the base, and taking them off successively, the whole flower of the next summer's tulip is beautifully seen by the naked eye, with its petals, pistal, and stamina.

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